PCN70

COST EFFECTIVENESS ANALYSIS OF SUNITINIB, BEVACIZUMAB + INTERFERON-ALFA AND TEMSIROLIMUS AS FIRST-LINE THERAPY OF METASTATIC RENAL CELL CARCINOMA IN SWEDEN

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OBJECTIVES: The introduction of targeted therapies for the treatment of metastatic renal cell carcinoma (mRCC) has greatly improved patient prognosis compared with interferon-alfa (IFN-α). As these therapies differ in clinical efficacy and costs, economic evaluations are needed to help decision makers allocate scarce resources. We evaluated the cost effectiveness of sunitinib versus bevacizumab plus IFN-α and temsirolimus in patients with mRCC. **METHODS:** A cost-effectiveness model applying a third-party payer perspective was developed to simulate disease progression and survival using hazard ratios (HRs) for each treatment against IFN-α. The HRs were taken from latest data available for the pivotal phase III sunitinib trial and the phase II and III clinical trials of temsirolimus and bevacizumab plus IFN-α. Two comparative evaluations were made: (1) sunitinib versus bevacizumab + IFN-α in all patients and (2) sunitinib versus temsirolimus in patients with modified MSKCC poor-risk profile only. Swedish clinical experts' opinions and published data on routine follow-up, treatment-related adverse events, disease progression, best supportive care of terminally-ill patients, and costs were used to complement clinical trial-based parameters and quality of life measures. Model outcomes included life-years (LY), progression-free LY (PFLY), and quality adjusted LY (QALY) gained, treatment costs (2008 Swedish krona [SEK]), and incremental cost-effectiveness ratios. **RESULTS:** Sunitinib was more effective (gains of 0.19 PFLY, 0.23 LY and 0.16 QALY) and less costly (SEK 307,879) than bevacizumab plus IFN-α over 10 years for all patients. In poor risk patients, sunitinib was more effective (gains of 0.12 PFLY, 0.08 LY and 0.07 QALY) and more costly (SEK 18,024) than temsirolimus over 10 years. Sunitinib was cost-effective versus temsirolimus (SEK 265,044/QALY) compared to a threshold of SEK 500,000/QALY (€47,169/QALY). **CONCLUSIONS:** Sunitinib is a cost-effective alternative to bevacizumab plus IFN-α and temsirolimus for the first-line treatment of mRCC in Sweden.

PCN71

COST-EFFECTIVENESS OF RITUXIMAB COMBINED WITH FLUDARABINE AND CYCLOPHOSPHAMIDE IN PREVIOUSLY UNTREATED PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA IN FRANCE

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OBJECTIVES: This study assessed the cost-effectiveness of Rituximab (R) in combination with Fludarabine and Cyclophosphamide (FC) as first-line treatment for patients with Chronic Lymphocytic Leukemia (CLL) versus FC from the French Sickness Fund perspective. **METHODS:** A 3 health state (PFS, Progression and Death) Markov model with a 15 year life-time horizon was developed from the phase III CLL-8 trial (Hallek et al., 2008) with 2.2 years median follow-up. Utility values originated from a HTA-study in CLL using the EQ-5D York Tariff. Resource use was estimated through published data and expert opinion. The analysis was restricted to direct medical costs including bone marrow transplantation and blood transfusions reported in CLL-8. The unit costs were obtained from French official sources. Costs were discounted at 3%. Deterministic and probabilistic sensitivity analyses were performed and 95% confidence intervals (CI) reported. **RESULTS:** Patients treated with FC compared with R-FC spent longer in progression (0.23 years (CI 0.05–0.44), the mean cost of supportive care for progression represented the main cost driver. The totals per patient mean costs were higher for R-FC compared to FC alone due to the higher drug acquisition costs. However, this was partially offset by the reduction in the mean cost of supportive care for progression. Mean incremental life expectancy for patients treated with R-FC compared to FC was 1.21 years (CI 0.75–1.67), and when quality adjusted was 1.01 years (CI 0.61–1.44), at a cost of €13,585 and €16,226 per life year and quality adjusted life year gained, respectively. Univariate and probabilistic sensitivity analyses confirmed the stability of the model and resulted in ICERs consistently below commonly cited willingness to pay thresholds. **CONCLUSIONS:** R-FC is a clinically effective in first-line treatment of CLL patients as well as an economically optimal strategy in the management of CLL in France.

PCN72

EPIDEMIOLOGICAL AND COST-EFFECTIVENESS ANALYSIS OF THE CROSS PROTECTION DIFFERENCE BETWEEN THE BIVALENT AND THE QUADRIVALENT HPV VACCINES IN FRANCE

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OBJECTIVES: Compare the epidemiological and economic impact of accrued cross-protection against oncogenic human papillomavirus (HPV) types beyond 16/18 provided by the bivalent vaccine (bi-v) vs. additional protection against non-oncogenic HPV types 6/11 of the quadrivalent vaccine (quadri-v), in France. **METHODS:** A lifetime Markov model calibrated to the French setting was developed to reflect the natural history of low- (evolving to genital warts—GWs) and high-risk HPV (evolving to cervical cancer—CC) infections, together with screening and vaccination effects, for a single age cohort of 370,000 14-year-old girls (70% coverage). Transition probabilities, costs and utility were estimated from literature, official tariffs and expert opinions. Vaccine efficacy was obtained from recent phase III clinical trials (HPV-008 for bi-v and FUTURE I-II for quadri-v), for comparable cohorts on pre-sexual debut population (infection naïve). Life-long protection was assumed for both vaccines. Number of Cervical Intraepithelial Neoplastic lesions (CIN), CC, CC deaths and GW, QALY and costs were estimated. Costs and outcomes (discounted at 3% and 1.5% respectively) were compared from a societal perspective without indirect costs. **RESULTS:** Cross-protection of bi-v *vs*. quadri-v led to additional 29,587 CIN1, 2,928 CIN2+, 99 CC and 32 deaths prevented, while quadri-v prevented 14,302 GWs. It resulted in additional 556 QALY gained for bi-v The remaining CIN, CC and GW not prevented by vaccines would cost M€39 for and M€37 for At the current public prices of €111.82 for bi-v and €123,66 for quadri-v per dose, the vaccination program would cost M€143 and M€150 and be cost-effective at an estimated ICER/QALY of €10,611 and €11,833 respectively vs. the absence of vaccination. **CONCLUSIONS:** Both vaccines have different epidemiological impacts with an increased number of cancer cases prevented for bi-v, though in France, the economic impact of HPV mass vaccination is similar whatever the vaccine selected.

PCN73

COST-EFFECTIVENESS OF ADDING ZOLEDRONIC ACID TO ENDOCRINE THERAPY IN PREMENOPAUSAL WOMEN WITH HORMONE-RESPONSIVE EARLY BREAST CANCER IN GREECE, BASED ON THE ABCSG-12 STUDY

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OBJECTIVES: The ABCSG-12 trial demonstrated that adding zoledronic acid 4 mg IV q 6 months (ZOL) to endocrine therapy with goserelin 3.6 mg sc q 28 days plus tamoxifen 20 mg oral qd or anastrozole 1 mg oral qd (ET) in premenopausal women with hormone receptor positive (HR+) early breast cancer (EBC) improves disease free survival versus ET alone. The objective of this study was to estimate the cost-effectiveness of ZOL in this setting from the Greek health care system perspective. **METHODS:** A Markov model was used to project lifetime outcomes and costs of breast cancer care for premenopausal women with HR+ EBC receiving 3 yrs of ET or 3 yrs of ET plus ZOL. Cost-effectiveness was measured as the incremental cost per quality adjusted life year (QALY) gained. Probabilities of breast cancer recurrence were based on ABCSG-12. Probabilities and costs were from the published literature. Results were generated under 2 scenarios: 1) benefits of ZOL persist to the 7 yr maximum follow-up in ABCSG-12 (trial benefits) and 2) benefits persist until recurrence or death (lifetime benefits). **RESULTS:** Expected costs of 3 yrs of ZOL (medication and administration) were €1802. Under the trial benefits scenario, costs of breast cancer recurrence were reduced by €58; ZOL was therefore projected to increase total costs by €1764. Under the lifetime benefits scenario, costs of breast cancer recurrence were reduced by €1548; total expected lifetime costs were therefore increased by €273. QALYs gained with ZOL were 0.43 years under the trial benefits scenario and 1.39 years under the lifetime benefits scenario. Cost per QALY gained was €4102 and €196 under the two scenarios, respectively. **CONCLUSIONS:** Adding ZOL to ET in premenopausal women with HR+ EBC is highly cost-effective from the Greek health care system perspective even under conservative assumptions regarding the duration of ZOL benefits.

PCN74

COMPARISON OF THE COST-EFFECTIVENESS OF ZOLEDRONIC ACID THERAPY FOR RENAL CELL CARCINOMA (RCC) PATIENTS WITH BONE METASTASES IN FRENCH, GERMAN, AND THE UK POPULATIONS

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OBJECTIVES: Zoledronic acid (ZOL) is efficacious in reducing skeletal-related events (SREs) due to bone metastases in RCC patients. However limited information is available on its cost-effectiveness. This study evaluated the economic impact of ZOL therapy for RCC patients in France, Germany, and the UK. **METHODS:** The source for this analysis was a retrospective evaluation of a 9-month trial comparing ZOL *vs.* placebo with concomitant antineoplastic treatment in RCC patients with bone metastases. A model was developed to simulate quality-adjusted life years (QALYs) and costs by integrating relevant assumptions and published information pertaining to SRE-incidence, costs, and effects on quality-of-life (QoL), mortality, drug and administration costs. It was assumed that patients experienced a 20 to 80% decrease in QoL for a month following an SRE, depending on the SRE type. SRE costs were based on diagnosis-related group (DRG) tariffs and the published literature. **RESULTS:** ZOL-treated patients (n = 27) experienced 1.07 fewer SREs, gained discounted QALYs (France and Germany = 0.1563; the UK = 0.1575), and incurred substantially lower discounted SRE-related costs (France = –€4196, Germany = –€3880, the UK = –€3355) compared with patients who were on placebo (n = 19). Inclusive of the treatment costs, ZOL savings per patient by country were as follows: France = €1358, Germany = €1223, and the UK = €719. According to probabilistic sensitivity analyses, ZOL therapy was predicted to result in cost savings in 67% to 77% of 1000 model simulations, depending on the country. The cost per QALY gained was below the threshold of €30,000 in approximately 93% of the cases across all countries. **CONCLUSIONS:** ZOL is a cost-saving therapy for bone health management of advanced RCC patients in France, Germany, or the UK. This is because ZOL effectively prevents SREs,